

**UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

ENTROPIC COMMUNICATIONS, LLC,

*Plaintiff,*

v.

CHARTER COMMUNICATIONS, INC.,

*Defendant.*

Case No. 2:22-cv-00125-JRG

**JURY TRIAL DEMANDED**

**PLAINTIFF ENTROPIC COMMUNICATIONS, LLC'S MOTION FOR SUMMARY  
JUDGMENT OF VALIDITY UNDER 35 U.S.C. § 101**

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## **I. INTRODUCTION**

Plaintiff Entropic Communications, LLC (“Entropic”) respectfully moves for summary judgment that the Asserted Claims of U.S. Patent No. 8,284,690 (the “’690 Patent”) (Dkt. 97-4); U.S. Patent No. 8,792,008 (the “’008 Patent”) (Dkt. 97-2); U.S. Patent No. 9,210,362 (the “’362 Patent”) (Dkt. 97-5); U.S. Patent No. 9,825,826 (the “’826 Patent”) (Dkt. 97-3); and U.S. Patent No. 10,135,682 (the “’682 Patent”) (Dkt. 97-6) claim patent eligible subject matter.

Although Defendant Charter Communication, Inc. (“Charter”) has plead lack of subject matter eligibility pursuant to 35 U.S.C. § 101 for these five Patents, it has not, and does not plan to, move the Court on the issue.<sup>1</sup> Because the claimed inventions so clearly meet the *Alice* Step-One threshold inquiry—an issue of law—summary judgment is appropriate and will avoid unnecessarily charging the jury with determining *Alice* Step-Two issues at trial.

## **II. STATEMENT OF ISSUES TO BE DECIDED BY THE COURT**

Whether the Court should grant summary judgment that the Asserted Claims of the ’690, ’008, ’826, ’362, ’682 Patents are subject matter eligible under 35 U.S.C. § 101.

## **III. STATEMENT OF UNDISPUTED FACTS (“SUF”)**

1. The Asserted Claims of the five patents at issue under 35 U.S.C. § 101 are claims 7 and 8 of the ’690 Patent; claims 1–6 of the ’008 Patent; claims 11 and 12 of the ’362 Patent; claims 1, 6, 8 and 9 of the ’826 Patent; and claims 1–3 of the ’682 Patent.

2. Charter’s expert, Dr. Goldberg, served an expert report on the invalidity of the Patents-in-Suit, which includes allegations and supporting arguments that the Asserted Claims of the ’690, ’008, ’826, ’362, ’682 Patents are directed to ineligible subject matter. Ex. A, Goldberg Rep., ¶¶ 210–221, 332–346, 456–469, 559–569; Ex. B, Goldberg Suppl. Rep., ¶¶ 54–61.

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<sup>1</sup> The Parties met and conferred regarding their respective motions on September 1, 2023.

#### **IV. LEGAL STANDARD**

##### **A. Summary Judgment**

Summary judgment is proper when there are no genuine issues of material fact and the movant is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(a). A dispute of material fact is genuine if the evidence is such that a reasonable jury could return a verdict for the nonmoving party. *Anderson v. Liberty Lobby, Inc.*, 466 U.S. 242, 248 (1986). “Conclusory allegations unsupported by concrete and particular facts will not prevent an award of summary judgment.” *Duffy v. Leading Edge Prods., Inc.*, 44 F.3d 308, 312 (5th Cir. 1995) (citing *Liberty Lobby*, 477 U.S. at 247). All evidence is viewed in the light most favorable to the party resisting the motion. *Seacor Holdings, Inc. v. Commonwealth Ins. Co.*, 635 F.3d 675, 680 (5th Cir. 2011). The standard for summary judgment is two-fold: (1) there is no genuine dispute of material fact; and (2) the movant is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(a).

##### **B. Invalidity**

As a patent is presumed valid, the burden of establishing invalidity of any of a patent’s claims is borne by the party challenging validity. 35 U.S.C. § 282. The party challenging the patent bears the burden of overcoming the presumption of validity by clear and convincing evidence. *See Microsoft Corp. v. i4i Ltd. P’ship*, 131 S. Ct. 2238, 2242 (2011).

##### **C. Subject Matter Eligibility Under 35 U.S.C. § 101**

This Court is familiar with the two-step framework under the Supreme Court’s *Alice* decision. *See, e.g., CXT Sys., Inc. v. Acad., Ltd.*, No. 2:18-CV-00171-RWS-RSP, 2020 WL 9936131, at \*5–11 (E.D. Tex. Feb. 3, 2020) (collecting cases). At *Alice* Step-One, the Court considers what the claims are directed to, i.e., whether the claims at issue are directed to a patent-ineligible concept (such as an abstract idea). *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 573 U.S. 208, 217 (2014). If the claims are directed to a patent-ineligible concept, the *Alice* Step-Two considers

if the claim elements, individually and as an ordered combination, transform the nature of the claim into a patent-eligible application. *Id.* at 217–18.

The threshold legal question under *Alice* Step-One is “what the patent asserts to be the ‘focus of the claimed advance over the prior art.’” *TecSec, Inc. v. Adobe Inc.*, 978 F.3d 1278, 1293 (Fed. Cir. 2020) (internal quotation omitted). The analysis “must focus on the language of the Asserted Claims themselves . . . considered in light of the specification.” *Id.* at 1292–93 (internal quotations and citations omitted). The Supreme Court has cautioned against overgeneralizing claims, noting that “we tread carefully in construing this exclusionary principle [of laws of nature, natural phenomena, and abstract ideas] lest it swallow all of patent law.” *Alice*, 573 U.S. at 217; see also *TecSec*, 978 F.3d at 1293 (quoting *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1337 (Fed. Cir. 2016)) (explaining that “characterizing the claims at ‘a high level of abstraction’ that is ‘untethered from the language of the claims all but ensures that the exceptions to § 101 swallow the rule.’”). Instead, the Step-One “‘directed to’ analysis . . . depends on an accurate characterization of what the claims require and of what the patent asserts to be the claimed advance.” *TecSec*, 978 F.3d at 1294.

The *Alice* Step-One inquiry “often turns on whether the claims focus on specific asserted improvements in computer capabilities or instead on a process or system that qualifies an abstract idea for which computers are invoked merely as a tool.” *TecSec*, 978 F.3d at 1293 (quotation omitted and collecting authority). The Federal Circuit has “routinely held software claims patent eligible under *Alice* step one when they are directed to improvements to the functionality of a computer or network platform itself.” *Uniloc USA, Inc. v. LG Elecs. USA, Inc.*, 957 F.3d 1303, 1307 (Fed. Cir. 2020). Inquiries that courts look to include: (1) “whether the focus of the claimed advance is on a solution to ‘a problem specifically arising in the realm of computer networks’ or

computers”; and (2) “whether the claim is properly characterized as identifying a ‘specific’ improvement in computer capabilities or network functionality, rather than only claiming a desirable result or function.” *TecSec*, 978 F.3d at 1293 (citations omitted and collecting authority).

## **V. The Patents-In-Suit Are Patent Eligible Under 35 U.S.C. § 101**

### **A. Eligibility of the Asserted Claims of the ’690 Patent**

The ’690 Patent is titled “Receiver Determined Probe,” and relates generally to aiding in the diagnosis of problems with subscriber services. *See* ’690 Patent, 1:31-34. The ’690 Patent describes the use of probes to “characterize the communication channel over which data is to be sent between nodes of the network.” *Id.* at 1:41-43. Before the ’690 Patent, it was common for nodes in a network to send probes to one another to test the status or determine some characteristics of a channel of communication between nodes. ’690 Patent, 1:41-62. These prior art probes were limited to using predetermined parameters recognizable by nodes within the network. *Id.* at 1:52-57. The ’690 Patent recognized that using predetermined parameters, thereby providing no ability for the receiver of the probe to affect the probe to be sent, limited the utility of probes to characterize a channel of communication. *Id.* at 1:56-59. Addressing this deficiency, the ’690 Patent describes a method and system for allowing the node sending the probe to receive and obey instructions determining the nature of one or more probe parameters. This allows the probes to have increased parameter variability—based on instructions sent to the transmitter of the probe. *See id.* at 1:53-62.

The claims of the ’690 Patent specifically claim these new, flexibly-determined probes.

Independent claim 1 of the ’690 Patent is reproduced below:

1. A method comprising:
  - a) receiving in a first node, a probe request specifying a first plurality of parameters associated with the generation and transmission of a probe, wherein the first plurality of parameters at least specify content payload of the probe and a second node;

- b) determining a second plurality of parameters associated with generation and transmission of the probe;
- c) generating the probe in accordance with the first plurality of parameters and the second plurality of parameters, wherein the probe has a form dictated by the first plurality of parameters; and
- d) transmitting the probe from the first node to the second node.

Thus, claim 1 requires a method where the sender of the probe (the first node) receives a probe request instructing the first node to use a first plurality of parameters contained in the request to generate the probe. The specification of the '690 Patent describes how such a node, which will create and transmit the probe, receives a probe request specifying probe parameters, generates a probe according to the specified parameters, and transmits the probe. *Id.* at 1:66-4:19, 2:28-34, 6:17-47. Allowing the probe parameters to be defined and determined based on the request for a probe, the '690 Patent provides increased diagnostic capabilities for the communication network, improving the functionality of the probes themselves for diagnosing network problems. *Id.* at 2:20-27, 4:25-38, cl. 7.

Because the claimed method for generating and transmitting a probe is a specific improvement to the functionality of probes in the communication network, the claims of the '690 Patent are directed to eligible subject matter at *Alice* Step-One. *See Uniloc*, 957 F.3d at 1307; *see also TecSec*, 978 F.3d at 1293.

#### **B. Eligibility of the Asserted Claims of the '008 and '826 Patents**

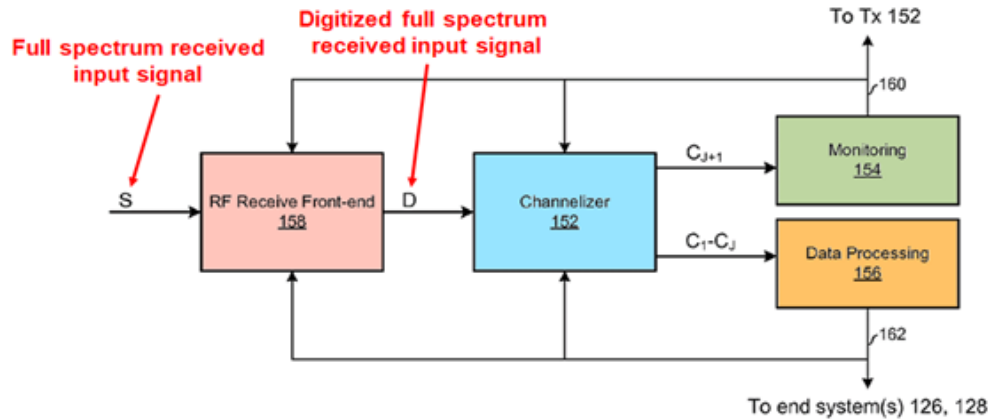
The '008 and '826 Patents disclose systems and methods that enable service providers (such as cable providers) to remotely monitor the quality and other characteristics of the signals customers actually receive, by monitoring at a customer's premises. In turn, operators can use this information to improve service, *e.g.*, by remotely diagnosing service issues without having to wait for a customer complaint or send a technician to perform onsite diagnostics. Because "[c]onventional methods" such as sending a technician or providing customers monitoring



equipment are “costly and impractical,” a solution was desired. ’008 Patent, 1:42-45; ’826 Patent, 1:52-55.

The specification of the ’008 and ’826 Patents describes various solutions to these problems and provides specific improvements in capabilities and network functionality, employing a particular signal processing architecture. For example, the ’008 and ’826 Patents describe an architecture which simultaneously monitors the signal while also processing the signal. Therefore customer service is not interrupted by monitoring, enabling a practical solution. The ’008 and ’826 Patents describe in detail selecting a portion of the incoming signal to provide for normal processing (*e.g.*, to deliver video or data service), while simultaneously selecting a portion of the signal to be routed to a signal analyzer. *See* ’008 Patent, 4:7-10, 4:45-50, 6:31-36, 7:15-32; *see also* ’826 Patent, 3:60-4:5, 7:34-55. This enables signal monitoring and reporting to the operator, thereby providing remote network diagnostic functionality without requiring sending a technician or providing customers separate monitoring equipment. Notably, the ’008 and ’826 Patents also disclose that the portion of the signal sent to analyzer may optionally be an entire received bandwidth, thereby providing full spectrum monitoring capabilities. ’008 Patent, 5:58-65; ’826 Patent, 6:7-15.

The ’008 and ’826 Patents illustrate the disclosed architecture in Fig. 1B below, showing a monitoring apparatus capable of (1) receiving and digitizing a full spectrum signal in a front-end **158** (red); (2) selecting portions of the outputs of the front-end **158** using a channelizer **152** (blue); (3) concurrently outputting a portion to a monitoring device **154** (green) and a portion to a data processing device **156** (yellow); and (4) sending network maintenance messages based on a characteristic of the received signal:



'008 Patent, FIG. 1B (annotated). Starting with receiving and digitizing the spectrum, the front-end **158** receives a signal that spans an entire television spectrum. This signal is then digitized using one or more analog-to-digital converters (ADCs) located in the front-end **158**, which generate a digital signal (D). *See* '008 Patent, 2:44-59, 3:11-16, 4:45-50, 5:45-65. Next, a channelizer selects portions of the digitized signal D to concurrently output to a monitoring module **154** and to a data processor **156**. *See id.* at 4:28-50, 6:19-36; *see also* 3:20-32, FIG. 1C, FIG. 3. The monitoring module **154** determines a characteristic of the received signal S pertinent to performance of the communication system. *Id.* at 3:5-60; *see also* 5:12-47, 6:19-36, FIG. 1C, FIG. 4. The monitoring module can communicate data describing the characteristics of the received signal to the source of the signal. *See id.* at 3:51-60.

The remote spectrum monitoring functionality and corresponding architecture is captured in the claims of the '008 and '826 Patents. For example, independent claim 1 of the '008 Patent is reproduced below:

1. A system comprising:
  - an analog-to-digital converter operable to digitize a received signal spanning an entire television spectrum comprising a plurality of television channels, said digitization resulting in a digitized signal;
  - a signal monitor operable to:
    - analyze said digitized signal to determine a characteristic of said digitized signal; and
    - report said determined characteristic to a source of said received signal;

a data processor operable to process a television channel to recover content carried on the television channel; and  
 a channelizer operable to:  
     select a first portion of said digitized signal;  
     select a second portion of said digitized signal; and  
     concurrently output said first portion of said digitized signal to said signal monitor and said second portion of said digitized signal to said data processor.

Notably, the claim lays out particular structural elements, including a signal monitor (for analyzing the signal), a data processor (for providing content for customer consumption), and a channelizer which selects and concurrently routes signal portions to the signal monitor and data processor. Again, Fig. 1B above is an example of this claimed architecture.

Similar structural elements are also recited by the method claims, such as independent claim 3 of the '008 Patent and independent claim 1 of the '826 Patent. For example, claim 3 of the '008 Patent recites digitizing a received signal (spanning a band from  $F_{lo}$  to  $F_{hi}$ ), selecting both a first and a second portion of the received signal, and concurrently outputting the portions to a signal analyzer and a data processor. '008 Patent, cl. 3. Similarly, claim 1 of the '826 Patent is generally directed to selecting a first and second portions of the signal, analyzing the first portion to measure a signal characteristic and transmitting messages about the measured characteristic back to the headend or signal source, and processing the second portion of the signal to recover content. '826 Patent, cl. 1.

Given the advantages described in the specification for remote spectrum monitoring, and the structural elements expressly recited in the claims, claim 1–6 of the '008 Patent and claims 1–3 of the '826 Patent are clearly directed to eligible subject matter under *Alice* Step-One. *See Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253, 1260 (Fed. Cir. 2017) (finding claim patent eligible under Step-One where “the specification discusses the advantages offered by the technological improvement.”).

### C. Eligibility of the Asserted Claims of the '362 Patent

The '362 Patent relates generally to a receiver system configured to receive a number of channels across a broad radio frequency spectrum. *See* '362 Patent, 1:15-18. The specification of the '362 Patent describes the then-existing problem of increasing the dynamic range of a wideband receiver without expensive data conversion, filtering, and channel selection. *See* '362 Patent, 2:24-27; *see also id.* at 1:41-45 (“The wideband receiver requirement poses a trade-off to the system to limit either the dynamic range of the wideband tuner or reduce the bandwidth covered by the tuner so that fewer channels may be received and processed by the demodulator.”). An incoming spectrum includes desired channels located at non-contiguous portions of the spectrum, interspersed with undesired channels. The '362 Patent observes that the dynamic range of a wideband receiver can be increased by eliminating the undesired channels. *Id.* at 1:24-34, 2:31-42, 6:1-4, 6:62-64. The '362 Patent discloses various circuit structures and corresponding methods to accomplish this goal. One is embodied in independent claim 11:

11. A method comprising:  
     in a wideband receiver system:  
         downconverting, by a mixer module of said wideband receiver system, a plurality of frequencies that comprises a plurality of desired television channels and a plurality of undesired television channels;  
         digitizing, by a wideband analog-to-digital converter (ADC) module of said wideband receiver system, said plurality of frequencies comprising said plurality of desired television channels and said plurality of undesired television channels;  
         selecting, by digital circuitry of said wideband receiver system, said plurality of desired television channels from said digitized plurality of frequencies;  
     and  
         outputting, by said digital circuitry of said wideband receiver system, said selected plurality of television channels to a demodulator as a digital datastream.

Charter and its expert Dr. Goldberg err as a matter of law by divorcing the verbs of the claims from the entire remainder, in an attempt to generate generic claims that do not exist. The four steps of “downconverting,” “digitizing,” “selecting,” and “outputting” are the first words of the elements, but the rest of each element cannot be ignored. Yet this is precisely Charter’s method

of attack—arguing that such steps *in the abstract* were well-known or lack inventive concepts. Op. Rep., ¶¶ 463-466. This overgeneralization Dr. Goldberg proposes is precisely what the Supreme Court warned is forbidden as a matter of law and does not acknowledge what the claims *actually do* when these verbs operate on the objects in the full claim elements. *See Alice*, 573 U.S. at 217 (“[A]n invention is not rendered ineligible for patent simply because it involves an abstract concept.”). The downconverting and digitizing steps together accept the input signal and convert both desired and undesired television signals into a new form—the digital form.” ’362 Patent, 12:48-53. Then, with the mixture of desired and undesired channels in digital form, the desired television channels are “select[ed]” and “output[.]” to a demodulator. That is, the claim selects—in digital form—some of the channels from within the full frequency spectrum of the input and provides only such selected, desired channels for demodulation, thereby increasing the dynamic range of a wideband receiver. *See id.* at 2:31-42, 6:55-64.

Previously, block tuners were only able to capture a small, contiguous block of the frequency band, so if the desired channels were in non-contiguous portions of the spectrum, they could not be captured at the same time. *Id.* at 1:35-64. The ’362 Patent is directed to the specific capability of capturing the entire spectrum including all of the desired portions even when located non-contiguously over the entire spectrum. Accordingly, claim 11 and its dependent claim 12 are directed to a specific improvement to address a specific problem with the capabilities of the then-available wideband (*i.e.*, block) receiver systems to receive multiple desired but non-contiguous channels, and are thus directed to eligible subject matter at *Alice* Step-One. *TecSec*, 978 F.3d at 1293.

#### **D. Eligibility of the Asserted Claims of the ’682 Patent**

The ’682 Patent relates generally to how the cable infrastructure provides data services to cable modems (CMs) located at customer premises. Infrastructure devices called CMTSs serve the

CMs. Among other tasks, a CMTS may adjust various transmission parameters (such as number of bits per symbol, etc.) so that the transmissions are sufficiently robust to be successfully received despite noise in the communication channel.

Before the '682 Patent, all CMs served by a CMTS were treated the same, using the same parameters. '682 Patent, 1:56-62, 2:56-60. The '682 Patent recognizes, however, the CMs are generally not the same due to different connections, distance from the CMTS, etc. *Id.* at 2:61-65, 5:7-20, 5:50-57. The CMs hamstrung with the most noisy connections will require that the CMTS choose slower transmission parameters so they are more robust and resistant to errors caused by the noisy communication channel. *See id.* at 5:40-6:6. The '682 Patent recognizes the implications—the CMs with the worst connections will bring down the performance all the CMs since the communication parameters are applied to all CMs. *See id.* at 5:40-57. This wastes opportunities to use higher-speed (but less error resistant) parameters with a subset of CMs with better (*e.g.* less noisy) connections—something the '682 Patent notes as a type of “least common denominator” problem. *See id.* The prior art did not understand that superior performance could be achieved by categorizing cable modems based on performance metrics, such as signal-to-noise ratio (SNR)-related metrics, thereby improving the efficiency and quality of service of a CMTS servicing a plurality of cable modems. '682 Patent, Abstract, 1:49-2:6, 3:53-4:2.

Recognizing the problem inherent in treating all CMs the same, the '682 Patent describes a new method for the infrastructure to treat CMs by grouping them into service groups based upon SNR-related metrics. For each group, an optimized physical layer communication parameter(s) is selected for, and used to communicate transmissions to, the devices in that group. This method exploits the previously-wasted potential of the CMs with better (*e.g.*, less noisy) communication links. This method both makes communications over the communication network more efficient

and increases capacity of the communication network itself. *Id.* at 1:54-62, 4:40-56, 5:40-57, 6:39-7:22.

Claim 1 specifically claims one example of applying this method:

1. A method comprising:
  - determining, by a cable modem termination system (CMTS), for each cable modem served by said CMTS, a corresponding signal-to-noise ratio (SNR) related metric;
  - assigning, by said CMTS, each cable modem among a plurality of service groups based on a respective corresponding SNR-related metric;
  - generating, by said CMTS for each one of said plurality of service groups, a composite SNR-related metric based at least in part on a worst-case SNR profile of said SNR-related metrics corresponding to said one of said plurality of service groups;
  - selecting, by said CMTS, one or more physical layer communication parameter to be used for communicating with said one of said plurality of service groups based on said composite SNR-related metric; and
  - communicating, by said CMTS, with one or more cable modems corresponding to said one of said plurality of service groups using said selected one or more physical layer communication parameter.

The first two elements of claim 1—“determining” and “assigning”—recite the process of assigning CMs into groups based on a quality metric (specifically “a respective corresponding SNR-related metric”). *See, e.g.*, ’682 Patent, 3:53-63, Abstract (“A cable modem termination system (CMTS) may determine, for a plurality of cable modems served by the CMTS, a corresponding plurality of SNR-related metrics. The CMTS may assigning [sic] the cable modems among a plurality of service groups based on the SNR-related metrics.”). Elements 3-5—“generating,” “selecting,” and “communicating”—then recite the CMTS determining appropriate—and quite probably different—communication parameters for each group “based at least in part on a worst-case SNR profile of said SNR-related metrics corresponding to said one of said plurality of service groups.” *See also e.g.*, ’682 Patent, 2:24-27, 5:42-57.

The claimed subject matter “purposefully arranges the components in a distributed architecture to achieve a technological solution to a technological problem specific to computer

networks.” *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1301 (Fed. Cir. 2016). Accordingly, Asserted Claim 1 (as well as dependent Asserted Claims 2 and 3) of the ’682 Patent is directed to a specific solution that provides the improvement to the operation of the communication network between the CMTS and cable modems described in the ’682 Patent, and is thus directed to eligible subject matter at *Alice* Step-One. *TecSec*, 978 F.3d at 1293.

## VI. CONCLUSION

For the reasons discussed above, there is no genuine factual dispute to preclude a determination by this Court that the Asserted Claims of the ’690, ’008, ’826, ’362, and ’682 Patents are subject matter eligible.

Dated: September 11, 2023

Respectfully submitted,

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**CERTIFICATE OF SERVICE**

I hereby certify that a copy of the foregoing document was filed electronically in compliance with Local Rule CV-5(a) and served via the Court's CM/ECF system on all counsel of record on September 11, 2023.

/s/ James Shimota  
James Shimota